REMARKS

This is in response to the *Final* Office Action of November 19, 2009, where the Examiner has rejected claims 1, 3-12, 14-22, 24-28 and 30-49. By the present amendment, applicant has amended claims 1, 12, 22 and 28, and added new claim 50. After the present amendment, claims 1, 3-12, 14-22, 24-28 and 30-50 are pending in the present application. Reconsideration and allowance of outstanding claims 1, 3-12, 14-22, 24-28 and 30-50 in view of the following remarks are requested.

A.   Rejection of Claims 1, 3-10, 12, 14-20, 22, 24-26, 28, 30-32 and 34-49 under 35 USC §103(a)

The Examiner has rejected claims 1, 3-10, 12, 14-20, 22, 24-26, 28, 30-32 and 34-49, under 35 USC §103(b), as being unpatentable over Kroon (USPN 5,664,055) ("Kroon") in view of Vainio, et al. (USPN 5,782,367) ("Vainio"). Applicant respectfully disagrees with the Examiner's rejection; however, in order to expedite the prosecution of the present application, applicant has amended independent claims 1, 12, 22 and 28 to further clarify the invention of claims 1, 12, 22 and 28.

By the present amendment, applicant has amended the specification of the present application to add a number of paragraphs from Provisional Application Serial No. 60/455,435, that has been incorporated by reference in the present application in its entirety. Applicant respectfully submits that no new matter has been added.

By the present amendment, applicant has also amended independent claim 1 of the present application to recite "transmitting each of said plurality of voicing indexes as part of each

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of said plurality of CELP speech frames and *in addition to said CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters.*"

It is respectfully submitted that the bit allocations in the present application, as amended, provides support that the three-bit signal decomposition parameter is transmitted in addition to other parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook. Further, the present application provides that signal decomposition parameter is an example of a voicing index of the present application, as shown below:

> The voicing index can be used to improve the quality stability by controlling encoder and/or decoder, for example, in the following areas: (a) fixed-codebook short-term enhancement including the spectrum tilt, (b) perceptual weighting filter, (c) sub-fixed codebook determination, (d) LPC interpolation, (e) fixed-codebook pitch enhancement, (f) post-pitch enhancement, (g) noise injection into the high-frequency band at decoder, (h) LTP Sinc window, (i) signal decomposition, etc. In one embodiment for CELP speech coding, the voicing index may be based on a normalized pitch correlation.

> As another example, the voicing index may also be used to determine the amount of noise that should be injected in the high frequency band at the decoder side. This embodiment may be used when the input speech is decomposed into a voiced portion and a noise portion as discussed in pending U.S. patent application serial No. _____, filed concurrently herewith, entitled "SIGNAL DECOMPOSITION OF VOICED SPEECH FOR CELP SPEECH CODING", specification of which is incorporated herein by reference.

Turning to Kroon, applicant respectfully submits that Kroon fails to disclose, teach or suggest "transmitting each of said plurality of voicing indexes as part of each of said plurality of CELP speech frames and *in addition to said CELP coding parameters* including line spectral

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frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters." It is respectfully submitted that the "index" referenced at column 1, lines 43-64 of Kroon is simply a fixed codebook parameter, and claim 1, as amended, is now patentably distinguishable over such broad reading of the "index" referenced in Kroon, since it is recited that the "voicing index" is in addition to CELP coding parameters including line spectral frequencies, pitch, fixed codebook gain, adaptive codebook gain and fixed codebook parameters.

Accordingly, for the reasons stated above, it is respectfully submitted that claim 1, as amended, is patentable over Kroon. In addition, independent claims 12, 22 and 28 include limitations similar to those of claim 1, as amended, and should be allowed for the same reasons stated above. Further, claims 3-10, 14-20, 24-26, 30-32 and 34-49 depend from claims 1, 12, 22 and 28, respectively, and should be allowed at least for the reasons stated above.

B. New Claim 50

By the present amendment, applicant has added new claim 50, which recites "at least one of said plurality of voicing indexes provides information from said encoder to said decoder for a bi-directional pitch enhancement." Applicant respectfully submits that no new matter has been added, and claim 50 should also be allowed at least for the same reasons stated above.
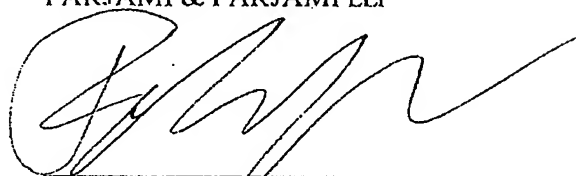
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Application Serial No.: 10/799,503
Attorney Docket No.: 0160113

C.   Conclusion

Based on the foregoing reasons, an early Notice of Allowance directed to all claims 1, 3-

12, 14-22, 24-28 and 30-50 pending in the present application is respectfully requested.

Respectfully Submitted,
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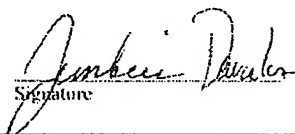<tr><td colspan="2">I hereby certify that this correspondence is being filed by facsimile transmission to United States Patent and Trademark Office at facsimile number (571) 273-8300, on the date stated below.</td></tr>
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